

SAN DIEGO DX CLUB

BULLETIN



April 2008



N6OX at the TX5C Controls



Join us at
The SIZZLER, Aero Drive & Murphy Canyon Rd
April 23, 2008
Dinner, 6:00 P.M. - Meeting, 7:00 P.M



2007/08 Officers

President:

Paul Dorey WN6K

(760) 726-5301

WN6K@cts.com

Vice President:

Glenn Rattman K6NA

760-749-3936

k6na@cts.com

Secretary/Treasurer:

Harry Hodges, W6YOO

(760) 743-4212

w6yoo@cox.net

Past President:

Jim Stevenson W6YI

(760) 749-4080

w6yi@aol.com

Board of Directors:

Gayle Olson K6GO

(858) 673-9201

k6go@arrl.net

Jim Stevenson W6YI

(760) 749-4080

w6yi@aol.com

Wayne Zimmerman

NN6R

(858) 451-0458

wzimmermanll@cox.net

Ladder:

Bruce Thompson N7TY

(760) 336-0918

n7ty@arrl.net

Editor / Webmaster

Tuck Miller, NZ6T

(619) 434-4211

nz6t@arrl.org

San Diego DX Club Policy on content of

DX Bulletin and/or E-mail Reflector

The San Diego DX Club, a group of Amateur Radio operators, interested in the art of DXing, publish a monthly newsletter, and maintains an e-mail reflector where members and officers can post information of interest to other members. The E-mail reflector is NOT an official club reflector. The reflector was created for club use, but it is privately owned.

Our policy is to print and/or post only information that is related to Amateur Radio, and not items of a political or religious nature, unless it has an impact on Amateur Radio, such as antenna ordinances, etc.

If a member wishes to have printed/posted any topic that is not Amateur Radio related, they can submit a copy to the club newsletter editor, webmaster, e-mail reflector moderator or any club officer, and the matter will be discussed and decided upon by the Board of Directors. **No PERSONAL attacks** will be allowed in either the newsletter or on the reflector.

Submissions are due on the 1st Friday after the 2nd

TREASURER'S REPORT

March 31, 2008

Balance as of Feb 29, 2008: \$2,746.11

Income:

Regular Dues: 90.00

TOTAL: 90.00

Expenses: None

Balance as of Mar 31, 2008: \$2,836.11

Petty Cash: 20.00

Total Checking/Petty Cash: \$2,856.11

MEETING MINUTES

March 26, 2008

The San Diego DX Club held its regular monthly meeting on March 26, 2008 at the Sizzler Restaurant, Aero Drive and Murphy Canyon Road. The meeting was called to order at 7:00 p.m. by President Paul Dorey, WN6K. There were 29 members and guests present.

Two new members were voted in to the club:

Russ Guidry, Sr., K5OA

J. "Mark" Gang, N6SF

Welcome to Russ and Mark who joined for two years.

John, K6AM presented the TOP TEN which information may be found elsewhere in this newsletter.

Secretary/Treasurer Harry, W6YOO provided a list of some 18 members with dues is arrears. Some four members paid up on the spot. Harry will send out reminders to the others.

The DX Roundtable was lively and interesting as usual with a number of subjects discussed concerning antennas, contests, and the like. Some time was spent on the need for volunteers to assist at Visalia.

PROGRAM:

The evening's program was presented by Bob Grimmick, N6OX who was the team leader of the recent Clipperton Island DXpedition. The fascinating presentation included photos and interesting anecdotes about the journey to and from the island and the island adventure itself. Ranging from Bob's broken ankle to extreme temperatures cou-

pled with violent tropical storms, it was readily apparent that this was no casual vacation.

ADJOURNMENT:

There being no further business, the meeting adjourned at 9:10 p.m.

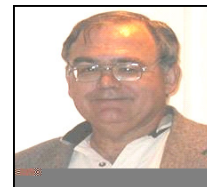
Respectfully Submitted,

Harry Hodges, W6YOO

Secretary/Treasurer

THE SDDXC TOP 10

By John, K6AM



TOTAL COUNTRIES WORKED ON 30 METERS

4/08	4/07	CALL	ZNS	C-D	CFM	WKD	CHG
1.	2.	W6YA	40	?	?	324	+8
2.	1.	K6AM	40	311	314	319	+2
3.	3.	N6ND	40	164	164	313	+2
4.	4.	W6KUT	40	266	266	295	-
5.	5.	K6TQ	39	293	293	293	-
6.	8.	N7CW	40	200	200	272	+38
7.	6.	N6CW	37	?	179	268	-
8.	7.	N6AW	40	248	249	260	-
9.	9.	K6ZH	37	186	186	223	-
10.	-	W6YOO	35	203	203	203	NEW

TOTAL COUNTRIES WORKED ON 15 METERS

4/08	4/07	CALL	ZNS	C-D	CFM	WKD	CHG
1.	1.	W6EUF	40	318	333	339	-
2.	2.	N6ND	40	267	277	338	+1
3.	3.	K6AM	40	330	336	337	+1
4.	4.	N6CW	40	?	324	336	-
5.	5.	N6AW	40	318	334	334	-
6.	6.	W6KUT	40	297	324	333	-
7.	9.	N7CW	40	279	279	313	+8
8.	8.	W6YOO	40	307	308	310	-
9.	10.	K6TQ	40	294	294	294	-
10.	-	K6ZH	40	275	278	294	NEW

The bottom of the sunspot cycle is not a problem for 30 meter enthusiasts. If anything, the band gets better as DX'ers the world over search for any frequency with long haul propagation. Congrats to Bud, N7CW for pushing his total way up from his new QTH and to Jim, W6YA, for getting back in the race and reclaiming the number one spot. The recent expeditions woke up 15 meters for a moment in the middle of the night time portion of the cycle, but like most of us who get up in the middle of the night, it went right back to sleep.

Each month, we will publish top ten lists for one of the lesser recognized but hard won categories. Coming up next, the other WARC bands, 160 and RTTY. Please send me your totals for each band throughout the year and you will be listed in coming months. Use the convenient form at <http://www.sddxc.org> or bring 'em to the meeting.

Received: from BBN.COM by FRED.BBN.COM id aa01822; 1 Apr 94 16:22 EST
Received: from Cone-Of-Silence.TGV.COM by BBN.COM id aa22473; 1 Apr 94 16:21 EST
X-ListName: Amateur Radio discussion list <CQ-Contest@tgv.com>
Warnings-To: <>
From: Sandy Lynch <slay@netcom.com>
Reply-To: Sandy Lynch <slay@netcom.com>
Message-ID:
<199404011920.LAA05309@netcom9.netcom.com>

Subject: Super Gain Antenna (LONG)
To: cq-contest@tgv.com
Date: Fri, 1 Apr 1994 11:20:12 -0800 (PST)
Content-Length: 8358

I recently received a letter from an old friend, Joe Speroni AH0A/7J1AAA, who has been living and working in Japan for many years. He is also the author of the well-known MORSE ACADEMY software for teaching Morse Code.

Anyway, it was such an exciting letter that I thought it would be of interest to others here on "the Net".

Dear Sandy:

I had promised a series of articles on Japanese amateur radio, but there is something so exciting I just have to take a break and tell you about it.

It all started with the work that Ed Coan (AH6MI/7J1AAE) did on antenna pattern plotting using his personal computer. The circular, and even backward antenna patterns of some of our local TIARA club members brought home the point that what a good station needs is a good antenna. Ed's antenna looks great and the results verify it. He works regular schedules into Colorado and Maine, just like sun spots don't mean anything. My mini-beam just could not compare.

Well, I got to thinking about what we apartment dwellers could do and realized that space is THE problem. How do you fit a full-sized beam on a balcony? Loading coils are the answer and the problem at the same time -- the antenna radiation resistance drops as reactance is substituted for length. High current loops develop and the power is dissipated in the antenna instead of being radiated. If only the antenna didn't dissipate the power.
Hmmmmm....let's see, $P = E^2/R$; if R were 0 then.....

From my work, I have some contacts in research groups over at Tokyo University. Better yet, I knew a Japanese ham who is a graduate student there. The thought running through my head was to build a super-conducting antenna. This requires cryogenics, i.e. temperatures around minus 279 degrees Centigrade. I was able to get the university folks interested in the project and we built a 10 meter dipole

test silicon wafer. They put together a lot of serial coils on the wafer and by "re-work" on the wafer, they were able to connect them so we had a super-conducting dipole. I took my TS-940 transceiver down to the lab for the first tests, but before we could test it, actual measurements showed it was resonant on 3126 KHz. It seems that the normal equations for inductance don't work with super conducting materials -- you need a lot few turns to get the same results than at normal temperatures. Many measurements and trials later, we had a ten meter resonant wafer. This time we put a pair of 40 element beams on each wafer and stacked 4 wafers in the same assembly. That made a 320 element array on 10 meters in less than a half-foot (15 cm) cube.

The first test didn't go too well. I connected the TS-930 to the super-conducting wafer antenna and tuned it for 10 meters. At room temperature, we couldn't hear anything. Using a heat pump, the lab technicians started lowering the antenna's temperature toward the super-conducting region. I was really impressed by how small the equipment is, and started thinking it might all fit in the shack. Just then, the TS-930 froze solid, which had a negative effect on its operating characteristics. This wouldn't be so easy after all, the coax connection would need some study!

We reworked the wafers to put inductive coupling on them, but I could find no way to efficiently couple to it from the conducting ceramic material that passed RF but not heat. Probably, something that Kyocera invented just for this use. I sent the TS-940 to the ham shop in Akihabara and asked them to touch it up for me. Suzuki-san (service manager at the ham shop) asked exactly how the paint had been peeled off around the coax connector -- lightning maybe? No, I assured him -- just low temperature exposure, without saying how low the temperatures were. The project had to stay secret and besides, Suzuki-san can repair anything!

Since it looked like it might be a while before the TS-930 would be repaired, I brought out my TS-940. I had already placed an order for the Yaesu FT-1000 anyway. After verifying that in the super-conducting range the antenna was resonant on 10 meters, we connected the TS-940. The ceramic material worked and the rig operated well even as we began the cooling cycle. The band seemed dead even with the antenna at -150 degrees C. It took another 10 minutes to get to the super-conducting range -- then the TS-940 blew up. It seems our antenna had a bit more gain than the TS-940 front-end could take. Later, with 100 dB of attenuation, measurements showed 5 volts coming out of the coax. A little hard to believe, but then what do I know about cryogenic LSI antenna technology?! The TS-940 was also returned to Suzuki-san, but this time he frowned a bit -- the front-end board did look like it had been hit by lightning. Not to worry, Suzuki-san can repair anything!

The FT-1000 arrived just in time to be able to continue the experiments. We built a QSK attenuator to protect the receiver and with the LSI wafer antenna still inside the lab, decided to try to make a contact on 10 meters. Boy, what a

(Continued on page 5)

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shock when we got it working. The first thing we heard was a couple of W2's talking locally on 10 meters and that was with 80 dB of attenuation. We had the antenna array on a rotatable mount; I moved it about 1 degree and the W2's disappeared. What beam width! We tuned them in again, and they were just about to sign off, so we thought we would try to work them. The rig was tuned up at 50 watts on a dummy load; we switched in the wafer antenna and gave N2BA a call. The noise was unbelievable -- an ionized ray shot out from the antenna and hit the wall of the building. Before we knocked a hole in the band, we took out a piece of the lab wall! Ever wonder what an antenna pattern looks like in three dimensions? There was a small round hole in the wall of the lab -- about 1 cm in circumference. We cut power quickly. N2BA came back on frequency a few minutes later and said he was using his back-up rig; something had taken his main rig off the air. For some reason, the station he was talking to never came back, and so we decided not to transmit again until we knew for sure what was going on.

As near as we can tell, the antenna array has 120 dB gain over a dipole, but with a beam width of 0.75 degrees using the 60 dB points. With 50 watts output, the effective radiated power is 55 quadrillion watts at the center of the beam (5.5 with 13 zeroes). As soon as the University realized what we had built, the entire project was taken away from us and turned over to the Japanese Self-Defense Forces. Amateur radio "tinkering" has contribute to something, but I am not exactly sure what. I haven't the slightest idea what was in those wafers or how to explain how to build another set. But what I'd give to use a smaller set in the next CQ World Wide Contest! Do you think someone may be interested in this idea for Star Wars/SDI??

A few months later, the University contacted all of us and asked just how close we had been to the antenna when operating. As best as I can figure, we were in the null behind the array. From what has been said so far, it looks like a secondary use for our antenna may be as a mass sterilizer, but confirmation will have to await the results of the medical tests. If our antenna ever hits the market, it looks like remote operation would be desirable.

As I am writing this, I have been informed that Suzukisan can't fix everything after all. He's written off the 930 and 940, and I just found out that before the university terminated the project, they tried one more time with my FT-1000, but without the 100 dB attenuator to protect the receiver. It's front-end now matches the 940's and it looks like it will be awhile before I am on the air again. Maybe Yaesu will announce some new models soon.

Best 73, Joe Speroni AH0A/7J1AAA, ex-Chief Engineer - TIARA 1 April 1994

Credit is given to both TIARA NEWS and the author - Joe Speroni, AH0A/7J1AAA

TX5C Photos



Photos

By

WILD BILL

Heard on the air

(the calls have been omitted to protect all concerned!)

AAAAA: "I hear that XXXXX is leaving the hobby."

BBBBB: "Yeah, but he's said that before."

AAAAA: "Maybe so, but this time the Magistrate said it!"

